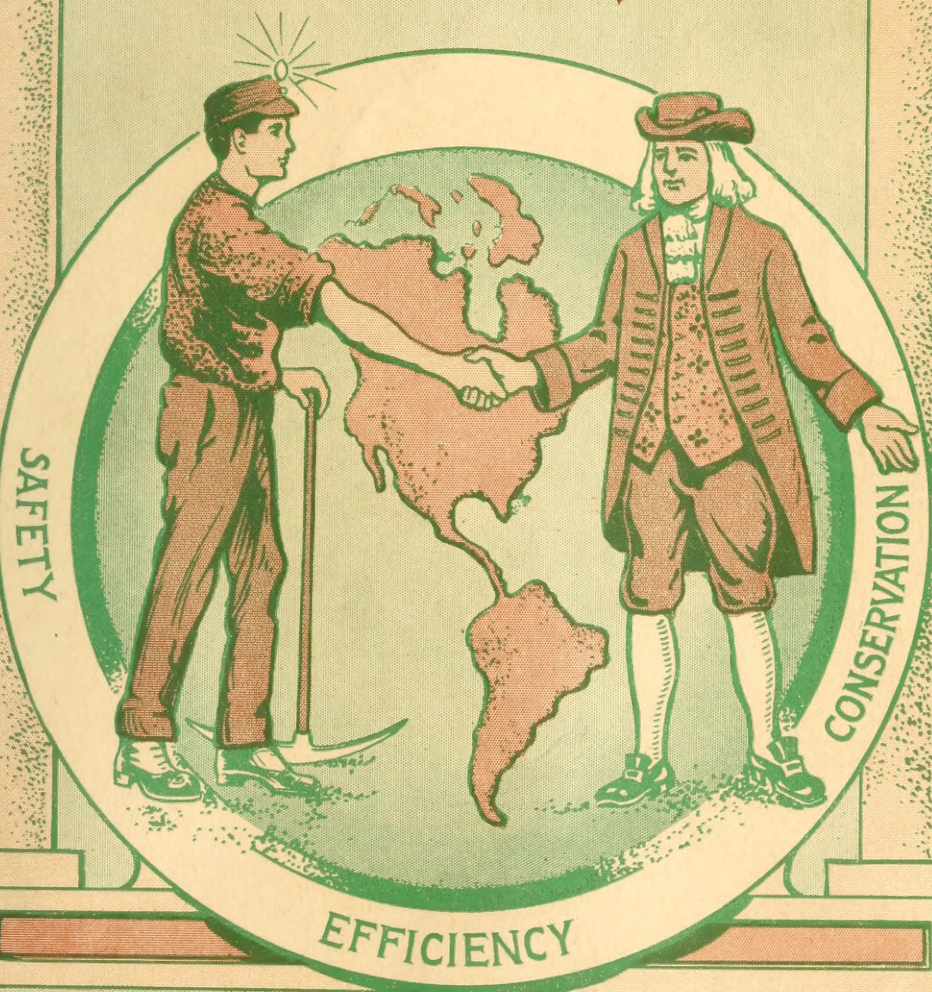


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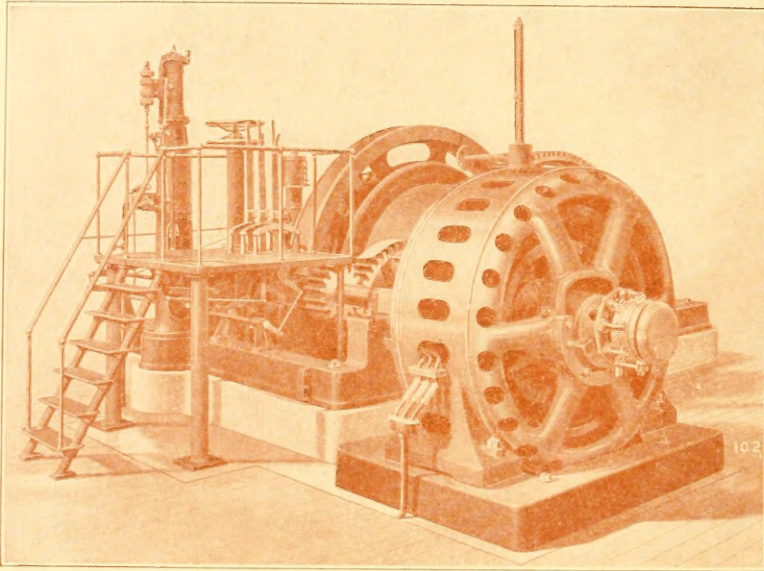
AMERICAN MINING CONGRESS



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The Mining Congress Family

WHAT IS IT?

Those who in different lines of enterprise are directly or indirectly interested in the prosperity of the mining industry.

Those who mine.

Those who use mine products.

Those who transport the production of the mines.

Those who furnish the machinery and supplies used in these operations.

All have a mutual interest and each can serve himself by serving the others.

All are interested in the highest development of the mining industry.

All are interested in the efforts of the American Mining Congress to better its conditions; each can help himself indirectly by helping the others, whose prosperity will create more demand for his own production.

With a lot of prosperous people needing your line of goods, you will get your share of the business. If you don't it's your fault.

If there is no market you will fail without being at fault, unless you have helped destroy the market or perhaps have failed to lend your aid in creating a market.

Will you join the Mining Congress family, each member of which is, so far as not to conflict with good business judgment, helping those who are helping the business upon which you depend? Why not?

The American Mining Congress

Denver, Colorado

Federal Aid

The Mining Industry is the only very great business which is not fairly well organized. The American Mining Congress represents the first serious effort to bring all branches of the industry into one organization, through which the needs of each branch may have the united support of the whole industry in making its reasonable demands effective.

The consideration given by the Federal government to Agriculture as compared with Mining, is a fair illustration of the public attitude. Agriculture receives from the Federal Government more than \$17,000,000.00, annually, while Mining receives, approximately, a million, and this only in the recent past, and almost none of this for the stimulation of production. Agriculture receives \$1.00 for every \$375.00 produced by the industry, largely to stimulate production. The Mining Industry, with problems requiring greater scientific attainment, and, of equal importance, is scarcely recognized.

This illustrates the necessity of a Stronger National organization through which the inherent individualism of the mining men may be brought into such co-operative efforts as will command for the Mining industries that place to which by reason of its importance, it is entitled.

Join the Mining Congress family.

The American Mining Congress

Denver, Colorado

Protection to Investors

Precious metal production in the West has not kept pace with industrial advancement in other lines. The prospector cannot continue his work except he is provided with a grub stake. This usually comes from the money of the small investor.

Prospects after discovery cannot be developed into mines without the expenditure of money. Mines are made, not found.

The honest and intelligent promoter is a boon to the business which he promotes. The faker should be exterminated. The greatest benefactor of the mining industry—the honest promoter—has been so persistently counterfeited by the faker that small investments have been made dangerous and almost impossible.

After removing the improper governmental restrictions upon mining development which will surely be accomplished, we shall still need to care for the prospector. This can best be accomplished by protecting the small investor in mining stocks against the dishonest promoter. This protection being given, thousands of promising prospects can receive that development which will determine their value, and the making of a mine out of one prospect in twenty will make vastly profitable the small investment in each of the twenty. It is up to some agency to work out this problem. Its solution will benefit the promoter, the engineer, the miner, the railroads and the manufacturers and dealers in mining machinery and supplies. The Mining Congress has made some progress in this work. The greater part is still to be done. Let us get together on this question.

The American Mining Congress

Denver, Colorado

Mine Taxation

The Mining Industry is willing to pay its just share of the costs of governmental administration, but it protests against being made the victim of special legislation. The State of Colorado has recently passed a law providing for the assessment of mining property at its full cash value, and, in addition thereto, one-half the gross output, plus all of the net profit of the mine during the previous year.

The State of Arizona has provided a full cash assessment of the mine and, in addition thereto, 1-8th of the gross product, plus four times the annual net profit of the mine.

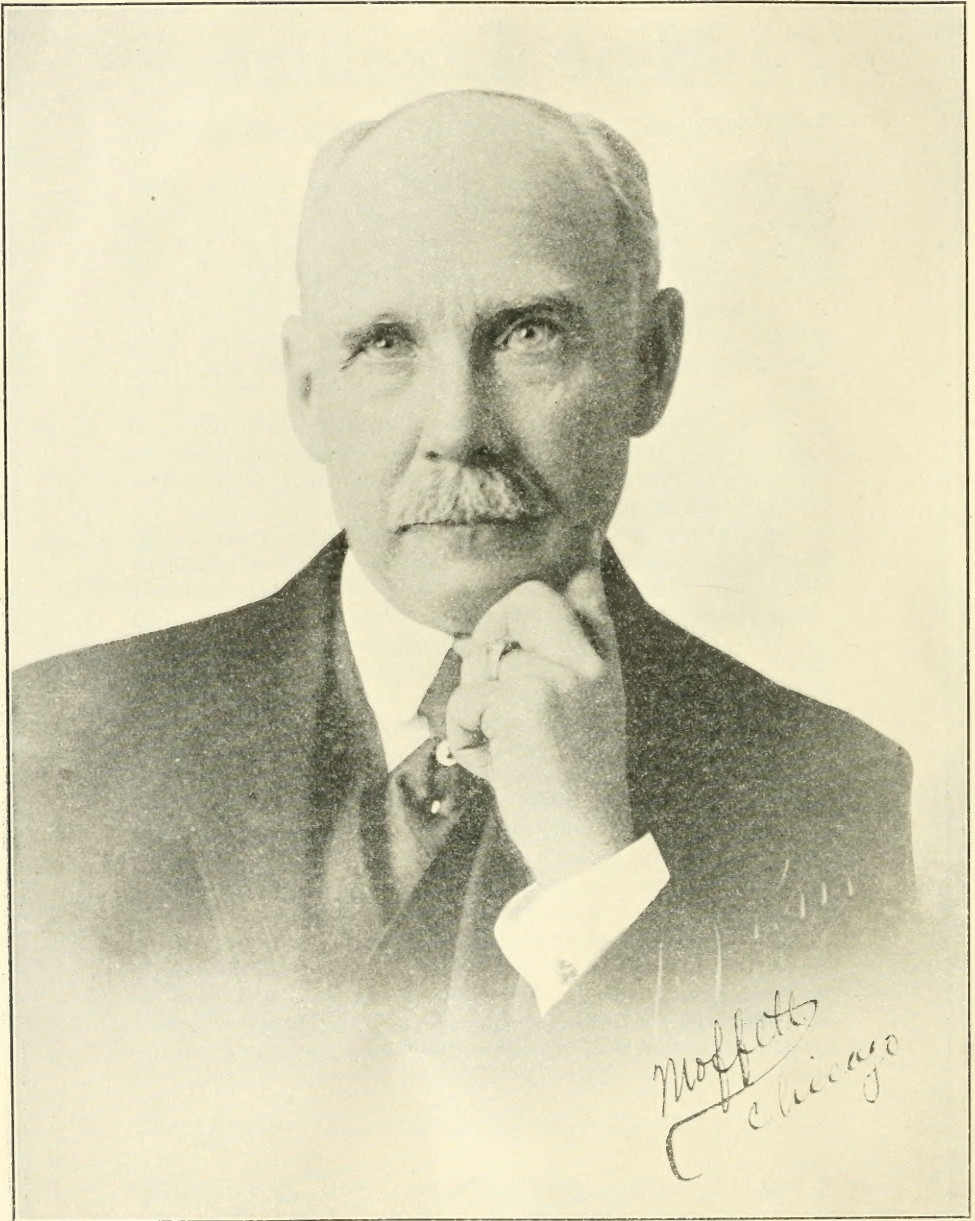
In Pennsylvania, in addition to the assessments, increasing the valuation of coal mines, from 100 to 500%, an additional tax of 2 1-2% is levied against the anthracite coal produced. This law was enacted by the same legislature which exempted timber from assessment, levying a nominal tax of \$1.00 per acre upon timber land. This law evidently intended to effect a conservation of timber, a reproducible product, while the very reverse theory is applied to coal, a product which, once exhausted, cannot be reproduced; and which, differing from timber, is absolutely essential to our industrial life.

These instances illustrate but one of the many phases in which organized effort will be necessary to give the Mining Industry that position in public affairs to which its great importance entitles it.

The American Mining Congress offers itself as a medium through which every branch of the industry may effectively work for the solution of its problems.

The American Mining Congress

Denver, Colorado



DAVID W. BRUNTON
PRESIDENT OF THE AMERICAN MINING CONGRESS

THE AMERICAN MINING CONGRESS

The American Mining Congress is an aspiration, not a consummation.

It aims at the betterment of every branch of the mining industry. Whatever success it has attained in the past has been the result of the crystallized aspirations of its supporters. Its future will be determined by the practical support behind its present aspiration to bring about the greatest safety, the highest efficiency and the most intelligent conservation.

These problems are most vital to human welfare. Their solution can only come through co-operative effort.

In securing these results, conflicting elements must be brought in harmony; the highest individualism upon the one hand, and the most perfect co-operation upon the other. When the individual is so independent that he does not work in harmony with others, the success of his efforts is but partial. The mining man, because of the inherent characteristics of his business, has developed the highest individualism. It is only recently that he has become convinced that without sacrificing his independence he can greatly benefit by harmonizing his work with the efforts of others. He has begun to realize that this is an age of specialisms. In the complex relations which industrial life has assumed, he has become convinced that efficient production alone will not make success of his enterprise; that while he may attain the highest economy in the recovery of mineral values, he must also be concerned with matters of transportation and exchange; that these involve questions of national import, for which he is not able by himself to find a solution. This was first recognized by the metalliferous mining industry. The western mining men discovered that their own efforts could not reach the highest success without the support of the coal miners. Thus, while most of the problems of each branch of the industry were of an entirely different nature, yet the greatest service could be

rendered to each by an organization representing the whole mining industry. This conclusion, and its ratification by the coal operators has made the American Mining Congress a distinctively national organization. In its field of operation it is alone. It has to do with the practical business affairs relating to mining. It is not now a question of success, but a question of how great that success may be. The perplexing question concerns the extent to which its National success may radiate and become beneficial to each of the localities which are concerned. It is evident that a different agency is required for State and local matters from that which is employed in the national work.

The American Mining Congress believes strictly in the principle of Home Rule. It recognizes that State problems should find a solution through the efforts of interested parties within the states, yet it hopes to harmonize these efforts, and to unify conditions which affect mining in the several States. Provision has been made for this condition by the creation of State Chapters of the parent organization, each fully authorized, subject only to the limited restrictions of the by-laws, to work out every problem of State concern. The State Chapter to this extent is entirely independent. It is given full authority to look after matters of State Legislation. The proper administration and support of State Mining Bureaus and Geological Surveys; Mining Taxation; Intra-state Freight Rates, and all matters concerning which mining conditions can be bettered by the co-operation of mining operators.

Following out this principle of Home Rule, provisions are made for the organization of local sections which are given full authority in matters especially affecting the mining conditions in any locality, or in which the members of any particular branch of the industry may organize for

mutual benefit. The local section desiring the action of the State Chapter upon any question, submits this to the State Chapter, and appeals to its fellow members to undertake the solution of such questions as are of State interest. In like manner, the State Chapter, in such matters as it believes should be acted upon by the National organization, after proper discussion, concentrates its conclusions into resolutions which are sub-



JAMES F. CALLBREATH
SECRETARY OF THE AMERICAN MINING CONGRESS

mitted to the National organization, and again the membership of the State Chapter appeals to its fellows in the National organization to undertake the work which it recommends. It is obvious that in this organization, from the local section to the National body, each member exerts an equal influence.

The organization machinery thus

perfected has been an evolution. Its by-laws are easily amended, and frequently have been amended to meet growing demands. If its present form shall need further change, a demonstration of this need will quickly result in the desired change. The central purpose has been that each individual member should have the same voice in management as every other member; that each district and each State should entirely control its own affairs, and have a voice in the National organization proportionate to its membership, and that the influence of the whole organization should be used in making effective whatever plan shall be decided upon by the majority of its members. Thus, the equipment seems complete for the best organized effort.

It remains for the mining men of the country, not the few who have been and are now bearing the burdens, but all who are interested in mining to join the movement. The officers of the Mining Congress are anxious to shape its efforts to meet the needs of the industry. If its efforts are misguided, you should correct them; if its efforts are not as effective as need be, you should help to make them more effective. The highest success cannot be attained without your support. Let us make the Mining Congress family a powerful reality.

With 3,800 mines potentially able to produce bituminous coal in the United States, with a market so disorganized by cut-throat competition as to threaten the bankruptcy of many bituminous operators, with the principal costs of mining and delivering coal to the consumer, labor and transportation, fixed by adverse interests, the coal operator finds it exceedingly difficult to carry on his business and meet the increasing demand for better safety and health conditions for his men, compensation for the victims of industrial accidents, and such conservation of coal resources as the public interest requires.

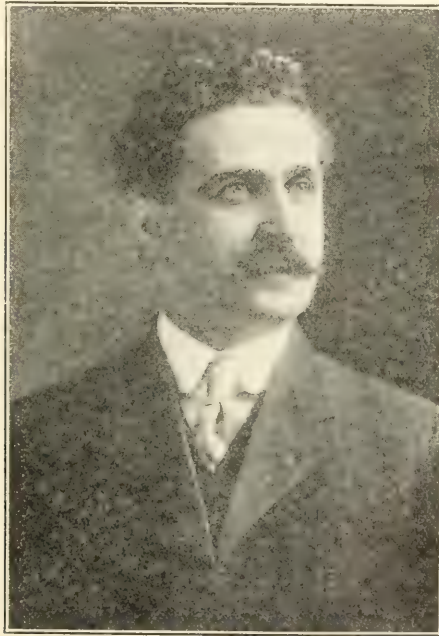
A Message to the American Mining Congress

By Dr. George Otis Smith

The message of the United States Geological Survey to the mining men is an offer of co-operation. A scientific bureau of the Federal Government cannot do the work of the mine-owner, the mine-worker, or even that of the mining engineer; it can and should endeavor, however, to supplement the work of all these. To extend this help to your industry is the pledge of the Geological Survey to the American Mining Congress.

Geological Survey serves and benefits other interests, but its chief work in the third of a century just past has been the promotion of the mining development of the country, and as you realize these thirty-four years of the Survey's life have witnessed the growth of the mining industry as measured by its yearly output from 350 millions to more than two billion dollars.

The practical value of topographic



DR. GEORGE OTIS SMITH
DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY

The field investigative work is three-fold: The carrying on of accurate topographic surveys; the making of broad geologic examinations and intensive studies into the structure and mineral resources, and the determination of the water resources. Together this work results in a survey of all the natural wealth of the nation, in the investigation of which the mining industry is solely concerned. The

maps to practical men may be inferred by the fact that more than half a million copies of these are sold annually, yet mining men perhaps do not even yet fully appreciate the usefulness of these surveys. At the recent Butte meeting of the American Institute of Mining Engineers, however, it happened that these topographic maps formed the subject of the liveliest discussion, a fact which may

forecast their wider use by mining men in both exploratory and development enterprises.

The work of the Federal geologists in the mining districts both east and west is familiar to the profession. Our endeavor continues to be along the line of trying to make each investigation such as to materially aid the practical man on the ground. To this end, the field examination must be timely and the publication of the resulting report prompt. Whatever the obstacles in Washington to accomplishing this, we realize what the public wishes and deserves, and will keep on trying to cut down the period between the visit of the geologist to your district and the appearance of his printed report.

A few of the investigations now in progress which are expected to prove of special interest to mining men may be mentioned simply to illustrate the scope of the work. The problem of the secondary enrichment of silver ores is being attacked by a geologist and a chemist, this team work in the field marking a somewhat new departure in method. During the present field season most of the well-known silver camps of Colorado have been examined in the course of this study. The widespread interest in radioactivity gives special importance to an investigation of the uranium and vanadium deposits of Colorado and Utah now in progress. So also the smaller mining camps of Nevada and California are being visited by the Survey geologists and reports promptly issued, first in a preliminary form and then in the more complete treatment. More comprehensive are the reports on the geology and ore deposits of Utah, Idaho and Arizona in progress of preparation, which will be similar in scope to the already issued report on the "Ore Deposits of New Mexico."

Then also both east and west the surveys of coal-fields continue and it is the plan of the Bureau to publish within the year a coal map of the United States on a scale sufficiently large to serve the purposes of the mine operator, the transportation man, and

the metallurgist—all of whom are vitally interested in the distribution of the available fuel supply.

In the Alaskan work the policy is to keep as nearly abreast of the prospector as conditions may permit.

In the collection and publication of mineral statistics the Survey is believed to be giving the mining man what he needs and wants and when he wants it, that is with the utmost possible expedition. Mineral statistics for any year begin to pour out of the Survey hopper almost before the old year has died. These advance statements are in some cases approximations, based on the actual returns for eleven months of the preceding year and close estimates on the twelfth month, and in the issuance of the final reports the dates have been so far advanced over the corresponding work of former years that but very few figures of annual production, even where they include complicated statements by counties, are not completed, printed and distributed within six or nine months of the close of the year represented. In this connection it is of interest to note a recent statement by the Director of the Census calling attention to the necessity for the early publication of annual figures of mineral production, if they are to be of any real value, and in fact criticizing the mining statistics of that bureau as losing their usefulness by reason of the earlier appearance of the facts in the Geological Survey reports.

In the important matter of the administration of the public land laws, the Geological Survey may be said to stand almost as the representative of the mining industry. Being essentially a field force, the Geological Survey's attitude toward all these questions is in large measure determined by what its field men see and learn in the mining camps of the west. Like you we look at the physical facts and base our recommendations both as to administration of existing laws and enactment of new legislation upon the consideration of these facts. As the technical advisers of the

Nation's executive and the people's representatives we are interested in the same plans for national development that you are promoting as the technical advisers and representatives of capital.

To illustrate the need of co-operation, because we are in reality working to the same end and with the same great purpose of trying to get the most out of our mineral resources, the mining man first of all encounters indefinite and inadequate mining laws, perplexing and unsatisfactory alike to himself and to the administrative officer. Here is the opportunity for co-operation in the crusade for legislation that will at least recognize the past one-third of a century's progress in mining engineering, geology and metallurgy. Pending such legislation, which needs to be framed to meet modern conditions in the mineral industry, the Chief Executive, acting upon specific recommendations of the Geological Survey, is making withdrawals of public lands whose chief value is for oil or gas, phosphate and potash. There is no business wisdom in allowing oil lands to be longer located and explored under a law framed to meet the conditions of discovering placer gold. In the development of an oil field that law provides no protection of the purposeful prospector against unscrupulous claim jumpers, nor of the developer, well-equipped with engineering experience and necessary capital, from the hold-ups of black-mailing paper-locaters. Again viewed from the standpoint of the citizens generally, the federal landlord receives nothing from these rich lands, although commonly the operator pays tribute to a middleman, usually larger in amount, and often with more exacting conditions than would be asked under a Federal lease. Similarly in the case of the mineral fertilizers, it seems plausible that a lease law can be framed with the help of the engineering profession, that will protect the consumer especially from the dangers of possible combination with foreign interests, and at the same time permit very profitable mining.

The United States Geological Survey, both at Washington and everywhere in the field, from the gold mines of Nome to the phosphate diggings of Florida, is working with a purpose identical with that of you men—the greatest industrial development of the country, but a development that will promote citizenship as well as turn the wheels of industry.

The most formidable economic problem which confronts the country today lies in the inadequate metallic support for the increasing credit necessary to continued business expansion. The annual world production of gold, less than a half billion dollars in value, is theoretically estimated to furnish a proper basis for a credit expansion of two and one-half billions, while the actual expansion of the world's credit approximates five billions annually. The United States produces approximately one-fifth of the world's gold supply, but her proportion of business expansion and accompanying credit is much greater. The latent gold resources of the United States are ample for all needs, but the problems of ore treatment are so intricate and difficult and the grade of ore so low that only by the highest efficiency can low grade ores be mined at a profit. The fame of the west is based on her high grade ores. Her great wealth is in her low grade ores, where a difference of fifty cents per ton in cost of operation marks the difference between success and failure.

With the growth of the mining industry comes an increased demand for men with the technical training which is necessary to this highly specialized business. The growth of mining schools under state control furnishes indisputable evidence of this demand. Agricultural schools fostered by the Federal government have been fully justified by results. Mining needs more greatly and is equally entitled to Federal aid in the making of experts capable of dealing with its many times more difficult scientific problems.

COAL MINING PROBLEMS

By Dr. J. B. Johnston

In the year 1909 there were in the United States 3,695 individuals, firms and companies that were producers of coal. Of these there were 192 producers of anthracite and 3,503 of bituminous coal. There were in the same year 6,436 mines in operation, of which number there were 423 producing anthracite and 6,013 bituminous coal. The capital employed was \$1,309,125,000, of which amount \$246,928,078 is accredited to the anthracite companies and firms, and \$1,062,197,083 to the bituminous. There was a total of 770,681 persons engaged in the coal producing industry, of which number 178,004 were in the anthracite and 592,677 in the bituminous divisions. The value of the product at mines was \$557,142,935, or about 60 per cent of the total value of all the metals produced from domestic and foreign ores, matte, and unrefined bullion smelted and refined in the United States in 1912. Moreover, this coal output furnished about 60 per cent of all the railroad freightage of all the railroads east of the Mississippi river and as high as 77 per cent on some of the important railway systems.

The figures here given are obtained from Census and other official reports of the United States government. Those relating specifically to the coal industry are as of date April 15 of 1909, and were obtained by direct application to those who were qualified to furnish them—a year when values were low and the coal industry, along with others, depressed and more than usually unprosperous; but it is safe to say that there has been invested in old and new coal mines since 1909 not less than one-half billion of dollars; for the output has increased from 415,842,698 net tons to more than 550,000,000 tons in 1912; number employed in the industry has increased in like ratio.

Has there been received by the investors in these numerous enter-

prises an adequate return on the capital? Here and there, where coal-mine operators have enjoyed peculiarly favorable geological and marketing conditions, perhaps there has been; but as a whole it is safe to say that the return has not been as much as would have been earned by the money if it had been invested in savings banks at three per cent interest and compounded every six months. If it had been so deposited there would have been no risks of mine fires, mine explosions, liability claims for accidents and deaths, increasing taxation almost every year, and constant necessity for the enlargement of investments in order that money already invested may be conserved and protected against loss.

Coal mining is unlike any other industry. It presents phases that are unlike any other form of investment. To engage in coal mining requires that the peak of the investment shall be made at the beginning of business. It involves large capital expenditure for a year before there can be any return hoped for. A mine will cost more per ton during the first half of its life than during the last half; but the life of a mine is limited by the extent of the acreage owned or leased. In this respect, coal-mining is vastly different from manufacturing or merchandising; factories and merchandising establishments are started with an idea to permanency. A factory may be idle and yet not eat up the investment, and may be maintained intact at a small expense; a merchandising establishment can always do something toward keeping down investment charges; but not so with a mine. It must be patrolled to protect it from fires, from falls of roof and sides, from accumulating gas or water, for which reasons fans and pumps must be kept going all the time, whether active or idle; and if idle the cost eats up the investment.

Besides, a coal mine is exhausting all the time, and every ton of coal taken out costs a fraction of a cent more than the ton which preceded it; because haulage is longer. Machinery also depreciates more rapidly than in manufactories.

Coal is a necessity of daily life in every civilized country—to perhaps 80 per cent of the population of the United States. Upon it all productive and transportation industries must depend, and also the comforts and conveniences of the people; yet this industry is subjected to greater clamor and denunciation than any other. When exigencies arise that cause enhancement of price—wage advances secured by coercion, etc., for instance—press and public combine to denounce the “Coal Barons.” It may here be said that coal has cost less in the past than it will in the future—because of increasing cost of deeper mines, higher costs for coal-mining properties, greater use of machinery, more stringent laws for the government of mining practice, and the response of coal-mining companies to public demands for the creation of better social and working conditions surrounding their operations, and the work of educating their employes as to safety and sanitation.

These newer conditions are laid upon the shoulders of the producer, and they cannot entirely shift the burden; but the consumer complains with the same breath he uses in denouncing the coal producer that he is heartless, inhuman and oppressive. The coal-producer is seemingly expected to remain a public philanthropist, as he has been in the past.

Does modern business life justify any such attitude? Ask the banker who is asked to buy coal-company bonds or shares. He will tell you that the coal business does not pay, and he does not want the bonds. The day when a coal miner could open a “gopher-hole” mine and with his sons produce coal for his local market is gone. Today it requires a half to a million dollars to open a mine from which it is expected to produce coal at the minimum cost per ton; this minimum must be attained in order that the producer may be able to hold position in the market places. In the “gopher-hole” day a pick, a shovel, a crowbar and a mule, constituted about the only tools a coal miner and a mine operator needed. Often the coal was pushed out of the mine by the men who dug the coal.

Coal mining is an indispensable industry; it must go on, else the wheels that keep civilization moving will stop. It must be made profitable to those who have their money invested in it; to those who expend years in qualifying and acquiring the technical and experience knowledge that enables them to operate mines with safety and security to men and property for the common welfare. Common sense and every consideration of prudence dictate this. How shall this be accomplished?

These are topics that are to be fully, freely and intelligently discussed during the session of the American Mining Congress by men who know many sides of the coal producing industry, and with the hope that out of a multitude of counsel there will come that wisdom that will lead to sound and just conclusions.

DISORGANIZATION IN THE COAL INDUSTRY

By George H. Cushing

It goes without saying that no state of disorganization can continue in any industry. Disorganization means waste of capital; waste of capital leads to waste of the resource behind that industry, and the two generally lead to waste of life of the workers. Somebody in the end—generally the consumer—must repay the loss thus created. Because it is the payer, the public, as well as the investor, is interested, or should be, in putting an end to disorganization.

It goes without saying and is admitted everywhere, that there is and has been disorganization in the bituminous coal industry. The fact that it is so generally conceded, literally screams the fact that it is known and prophecies with equal force that presently it will come to an end.

If disorganization is recognized and if it must end, somebody must end it; somebody is going to end it. Interest, therefore, centers in the person or institution, who or which will effect the organization. Three questions on this point present themselves with equal force to coal operator and to coal consumers.

First, shall the organization be effected by the coal operators themselves, without regard for the wishes of or without consulting any other?

Second, will the organization be effected by the coal operator after consultation with and support of the Federal government?

Third, will the organization be effected by men or institutions entirely outside of the coal trade and, it may be, entirely out of harmony with the present wishes and hopes of the government?

Disorganization being recognized, is going to give place to organization. There are only three possible solutions and one of these is going to be adopted. It is for coal operators and the people

to examine the plans and decide which is going to be accepted.

Keen observers have said that the coal men are incapable of organizing their own business. The charge is that they lack loyalty one to the other, and that the past and present conduct of most is of such character as to deprive them of the confidence of their fellows.

Two movements undertaken within five years in the west are cited as the foundation for this conclusion. An attempt was made to finance the equal distribution of fine coal. Although this was a movement in the general interest by a few, the plan was wrecked because certain operators and jobbers thought more of the good opinion of the consumers than they did of their colleagues or the coal industry.

Later, an attempt was made to gather certain statistical information, concerning the movement of coal during distress periods. This was given up before it was put into effect, because certain producers and jobbers could not be trusted to use the data as intended.

In the east two other movements have been undertaken and abandoned. The first was an attempt to introduce sanity into the flow of coal to market. It developed that this could be done only if certain important operators agreed to close all of their mines and retire, for a long period, from the market, leaving the other operators to enjoy a big business at higher prices.

The second movement was directed toward the reasonable discipline of the working force. The campaign soon developed into a fight between sections with the last stage of the producers far worse than the first.

Seeing these things, careful observers have concluded that organization of the coal industry by coal men is an impossibility.

This is pathetic.

Upon some harmony of action depends not only the profitableness of mining, but even the ability of operators to meet the exactions of the public synchronously with the exaction of the union. The operator has his employment, his capital and his future tied up in mining. With all these at stake, he is being put to the test to determine whether he can conduct his business sanely. If he fails, he is going to be eliminated from that business. The operators with so much at stake, are spending their time quarreling, thereby increasing the disorganization. This course of action is equivalent to issuing an invitation to some outside force to come in and supplant them in their own trade.

If the operators of their own volition, can not do this thing, is it possible for the government to organize the bituminous coal industry by using the men now in control. The continuing effort, extending over several years, has been to introduce into Congress the coal question for discussion. No member of Congress has been found who has enough stamina to commit himself to such a program, even so far as to introduce a bill into Congress that the proposal might be so much as discussed. Because of the extraordinary timidity of our statesmen, aid for the coal industry is going to be mighty slow in coming.

Still, we have the fact that organization must be affected. That raises anew the question: Who is going to do it? Particular attention is called, in this connection, to a significant fact. Most other businesses have been organized. The few big concerns which dominate those industries have been organized to produce a profit. These businesses are, out of their own earnings, financing themselves and have a certain surplus which is available for use in other directions. To such concerns, idle capital is as abhorrent as an idle machine. If this idle capital cannot be employed in that industry which created it, it

must seek employment in some other line.

It happens that there are not, any more, very many places where great sums of money can be profitably employed in the organization of industry. In fact, bituminous coal constitutes the one great financial opportunity today. On the one hand we have great sums of money available for immediate use. On the other hand we have recognized state of disorganization and recognized need for organization. To bring these two together requires only the rising of a man or a few men, who can see the opportunity and seize it.

While the coal operators are quarreling among themselves and while the statesmen are crouching in fear of their own shadows, it is entirely likely, that plans are being perfected for taking control of the bituminous coal industry out of the hands of those now managing it and for placing that control in the hands of organized finance.

This latter is the inevitable conclusion from the whole thing, unless the plans of the American Mining Congress are recognized, adopted and carried out. As to just what the plans of the Mining Congress are, the trade commission bill advocated elaborately in the last two years is a sufficient answer. At the meeting of the Congress at Philadelphia, October 20 to 24, this whole subject will come up for discussion. At that time, the Congress will definitely ask the coal operators whether they prefer to go on as they have done, or whether they prefer to step aside and let organized finance step into control of the business. It would seem to be distinctively worth while to every coal man, to be present and take part in this discussion.

The labor cost of the coal at the mouth of the mine is approximately seventy-five per cent of the average selling price. This cost is fixed by a combination apparently immune from the Sherman Anti-Trust Law.



BELLEVUE-STRATFORD HOTEL
Where the Sixteenth Annual Session of the American Mining Congress Will be Held

The Development of the Industries of Philadelphia in Relation to the Mining of Coal

By C. W. Summerfield

SECRETARY OF MERCHANTS' AND MANUFACTURERS' ASSOCIATION, PHILADELPHIA

Philadelphia has long been known as the world's greatest workshop, or the workshop of the Nation. Here are made more and a greater variety of various things than in any other state. The title to this claim is further proven and supported by the fact that Philadelphia, with one-sixtieth of the population of the United States, furnishes one-twentieth of its manufactures.

Settled in 1682 by William Penn and a small number of companions, mostly Quakers, "It was a fine spot for a town." The great city thus founded in the early days and on a small scale, is built chiefly upon a broad plain between the Delaware and Schuylkill Rivers, about one hundred miles from the sea, and upon the undulating surface to the north and to the west.

The railway and commercial facilities, the proximity to the coal fields, and ample room to spread and grow in all directions, added to the reasonableness of the cost of maintenance and living in this city, have made Philadelphia the greatest manufacturing center in the world. As a result, Philadelphia's output in manufactures is equal to the total product of the state of New Jersey and twice that of the state of California.

More than 16,000 separate manufacturing establishments are included within the borders of the city, these industries representing a capital investment of \$500,000,000. They employ 250,000 wage-earners who receive annually \$115,847,076 in wages. These factories consume annually raw material valued at \$400,000,000, and the value of the total output is recorded as \$703,466,526.

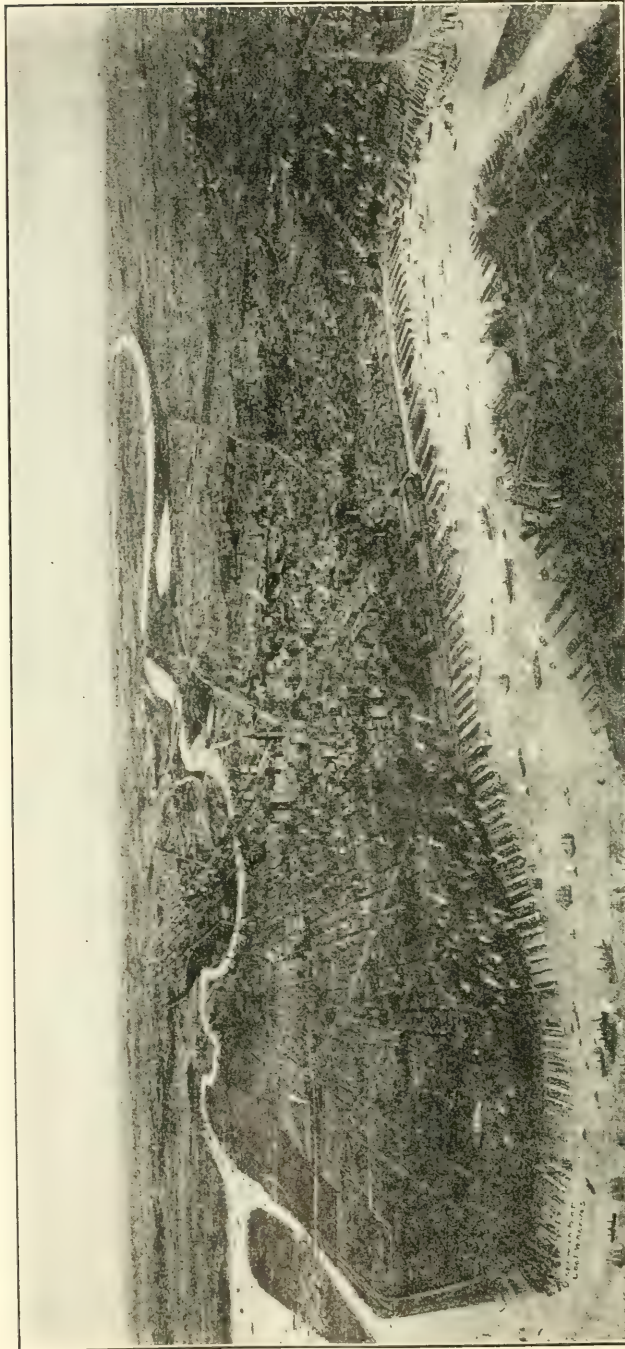
As a consequence, the population of this great city has grown to 1,600,000 inhabitants, housed in the

more than 350,000 separate dwellings. While popularly known as the City of Homes, owing to the adoption of the general principle that every family should, for the most part, live in its own house, yet, in addition to this, Philadelphia is eminently a manufacturing city. This may be explained by the fact that a greater percentage of the people live in their own homes in Philadelphia than is true of any other large city.

She leads the world in the manufacture of carpets and rugs with a yearly output valued at \$25,000,000, and employing 16,500 persons in 150 mills. Ninety-three establishments produce woolen cloths with a yearly output valued at more than \$12,000,000. Thirty-six establishments manufacture worsted cloths with a yearly output of \$26,900,000. One hundred and twenty-two cotton goods' factories turn out \$15,723,654 worth of product.

The largest single industry in the city is the Baldwin Locomotive Works, employing 15,000 to 18,000 men, turning out on an average of eight locomotives per day. The city also leads in the manufacture of ships, carpets, rugs, leather, hosiery, knit goods, felt hats, saws, oil-cloth and street cars. She is second in the production of foundry and machine shop products, sugar refining, petroleum refining, worsted goods, chemicals, drug preparations, dyeing and finishing textiles, cordage and twine. From the Pencoyd Iron Works, on the banks of the Schuylkill River, west from Fairmount Park, iron and steel bridges are sent all over the world, together with expert crews of men to erect them. The Midvale Steel Works contracts on a large scale for armor plate and projectiles.

For the past seventy-one years this



Bird's-Eye View of City of Philadelphia, Showing the Great Coal Wharves at Port Richmond and Greenwich Point, on the Delaware River

has been the home of the largest saw works in the world. Here is found the Cramp Ship Building Yards, for many years famous for the construction of battleships and for the building of merchant vessels. Files and saws and other tools from the Disston Saw Works are also found in every country on the globe.

Coming out of the anthracite coal region and flowing into the Delaware at League Island, the Schuylkill River has played an important part in the industrial development of this great city. Its waters, discolored by the masses of culm and refuse from the coal mines, have aided in floating on canal boats and barges countless millions of tons of anthracite coal to be fed to the furnaces in the factories and shops in this city; the smoke issuing forth from the funnels and chimneys showing evidence of the activity, industry and enterprise going on within the factories, giving employment to thousands and bringing joy and happiness to the willing workers and their loved ones, and bringing prosperity to the nation.

Being a plain and frugal people, the early settlers soon turned their attention to manufacturing in a crude way many useful articles for themselves and for each other. That was the earliest inception of manufacturing in Philadelphia, and from those crude beginnings have grown some of the greatest industries the world has known. It is stated that at Summit Hill, nine miles northwest of Mauch Chunk, the anthracite coal of the Lehigh region was first discovered by Philip Ginter, a hunter, in 1791. It is further recorded that a similar discovery was made near Wilkes-Barre in the Wyoming Valley district in 1762.

We read that the cost to transport coal to Philadelphia in the early days was about \$14 per ton, and in order to cheapen this cost efforts were made to improve the navigation of the Lehigh River, and out of these efforts grew the canal which was the early route of the coal to this city and which for many years was an important fac-

tor in the transportation of this commodity.

During the first quarter of the last century the Lehigh Coal & Navigation Company Canal was constructed, this being brought about by the needs of transportation from the Mauch Chunk region to Philadelphia. This canal is still in operation, although hampered by restricted dimensions, and even now is a factor in transporting coal and other commodities to this market.

It is said that about the year 1800 a wagon load of coal to Philadelphia from the Schuylkill region failed to find a market, and not until 1806 did the coal trade in this section begin to meet with assured success. As late as 1812 efforts to develop the Philadelphia trade were discouraged and it was not until about 1820 that the trade was in any way on the road to prosperity. It is said that that year marked a notable improvement in the navigation of the Lehigh and from that time onward the trade steadily advanced. We read, however, that during the year, 1820, 385 tons of coal went to Philadelphia and that this choked the market. From the year 1820 to 1830, however, when the canals were completed and in operation, the career of Philadelphia as a real manufacturing city may said to have begun in genuine earnest. It was further stated that no anthracite coal came to the market from any other source than the Lehigh region as a regular business before the year 1825. From this small beginning in less than a century the aggregate production and consumption of coal have reached the enormous total of upward of 75,000,000 tons of anthracite coal per year.

The discovery of coal in the Schuylkill region was made soon after the discovery of coal in the Lehigh region. The discovery of anthracite coal in the Schuylkill region and the subsequent rapid development of the market for it led to the construction of the Schuylkill Canal, which was begun in 1815 and completed to Mt. Carbon in 1825. With the continued discovery of additional coal veins and the

increased demand for the product, additional transportation facilities became necessary.

Railroads through Pennsylvania and from the Schuylkill coal regions were projected and constructed between 1827 and 1833, and railroads became factors in the transportation of coal and other commodities. Many of the canals in Pennsylvania, constructed in the earlier days, were later acquired by the railroads and abandoned for the quicker movement of coal and other freights by rail. A few of the canals, however, still remain and are now in operation.

About 1846 the Lehigh Valley Railroad came into existence. At Port Richmond in Philadelphia, the Philadelphia & Reading Railway operates what is said to be the most extensive shipping terminal in the world, conducted under the ownership of any railroad or transportation system. This shipping terminal covers an area of about 156 acres, and the railroad tracks thereon have a storage capacity of about 4,000 cars without congestion or interfering in any way with the movement of traffic on the main tracks.

Statistics show that there were shipped from the Port Richmond piers during one year 1,931,190 tons of anthracite coal, 2,448,169 tons of bituminous, and 1,442 tons of coke. In addition to the storage capacity for cars on the yard tracks at Port Richmond terminal, there is a coal storage plant there with a capacity of 200,000 tons.

It is said that in 1908 the mines of Pennsylvania produced more coal than the combined production of all the countries of the world, except Great Britain, Germany, and Austria-Hungary, and the same year, five times the production of France, and seven times the production of Russia.

The great deposits of coal, therefore, which rank first among the natural resources of the great Keystone State, have proven an important and indispensable factor in the development of the industries of the city of Philadelphia as well as to the entire commonwealth. The discovery, the

shipping, and the utilization of coal as a fuel provided power to create and maintain huge manufacturing enterprises.

The coal of Pennsylvania has enabled the drawing within the borders of this city industries exceeding in magnitude those of any other state in the Union, and behind the glowing forge and furnace and underneath the whirring spindles is the coal underlying the hills of the great State of Pennsylvania.

The American Mining Congress believes that fair provision should be made for the education and maintenance of the dependents created by any industrial accident but that this burden should be a charge against the industry as a whole and that the fund for its maintenance should be created by general contributions to which every employer of labor should be required to contribute regularly such amount as will in the aggregate make proper provision for the dependents thus created.

The tax upon natural resources is a burden upon their conservation. Whether coal lands should be taxed at the present value, the tax being made each year until their exhaustion, or whether the tax should be applied only when the coal reaches the market, is an important question and one of vital interest at this time, when the increasing expense of Government seems to require additional sources of revenue.

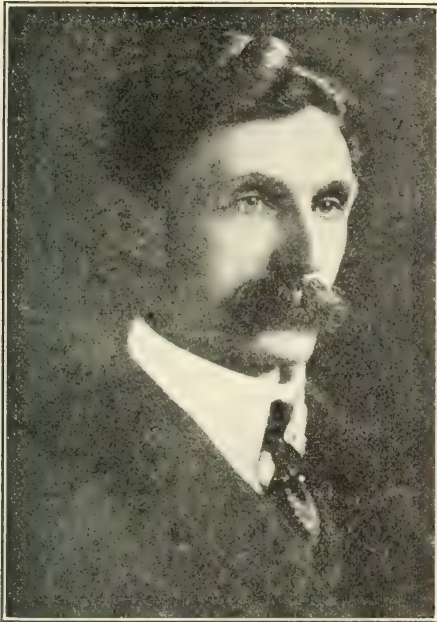
Any increase in average production cost made necessary to conserve the more expensively mined coal reserves which is less than the transportation cost for a more distant supply, will find economic justification.

Every theory of coal conservation must consider the right of the coal operator to a fair profit, the miner to fair wages and the public to have its fuel at the lowest price consistent with good mining methods.

THE UNITED STATES BUREAU OF MINES

Some of Its Accomplishments

The American Mining Congress, which organized the forces that lead



DR. JOSEPH A. HOLMES
DIRECTOR UNITED STATES BUREAU OF MINES

to the creation of the United States Bureau of Mines, takes pleasure in noting that that young and vigorous

organization, under the efficient leadership of Dr. Joseph A. Holmes, is fulfilling all the expectations that were made concerning it, and has already become a powerful agency for good in the mining industry. As a rule, it is difficult to estimate in dollars and cents the benefits derived by the industry from such investigations as the Bureau of Mines has conducted, but there are two or three investigations, the benefits from which are so apparent, it has led men who are vitally affected to make the statement that the work of the Bureau has been worth to the industry several times the amount appropriated by Congress for this purpose from the beginning.

The Saving of Human Life

The big, overshadowing accomplishment of the industry in connection with the efforts of the Bureau, state mine inspectors, operators and miners has, of course, been the reduction in the number of deaths in the mines. The following table, giving the number of deaths in the coal mines, the death rate per 1,000 men employed, and the number of men killed for every million tons of coal mined and the production for each death, in the last ten years, tells a story of remarkable progress.

Production, number of men employed, and number of men killed in and about the coal mines in the United States in the calendar years 1903 to 1912, inclusive.

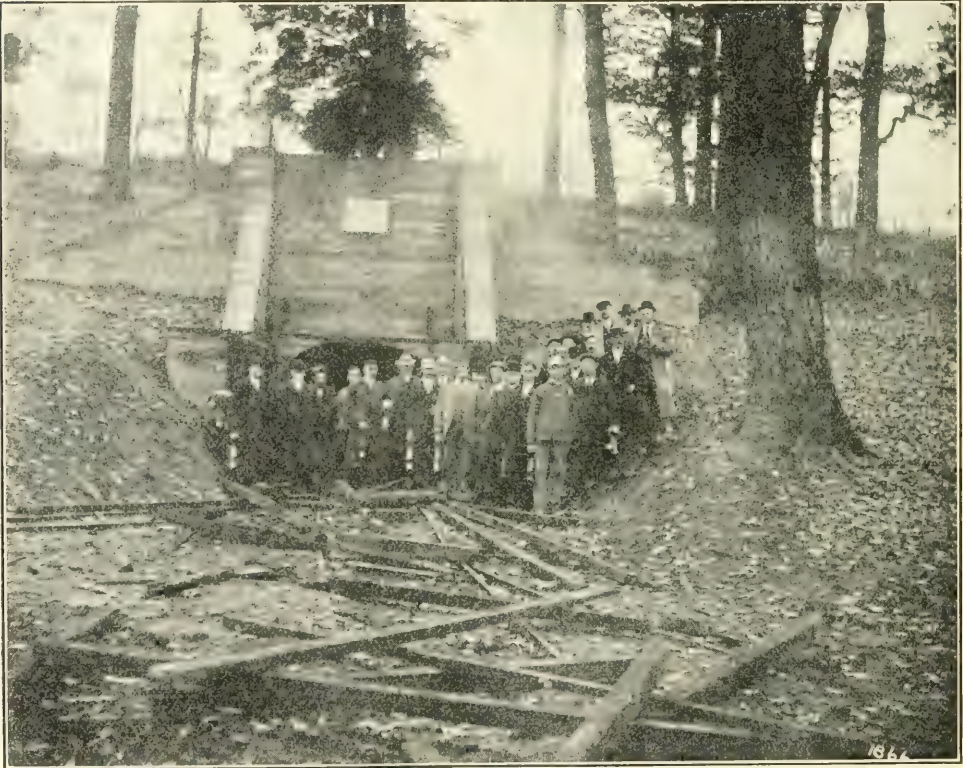
Year.	Production (short tons). ^b	Number em- ployed. ^b	Production (short tons). ^c	Number em- ployed. ^c	Number killed.			Produc- tion per death (short tons). —
					Total.	Per 1,000 em- ployed.	Per 1,000,000 short tons mined.	
1903	357,356,416	566,260	345,200,166	547,431	1,752	3.20	5.08	197,317
1904	351,816,398	593,693	339,164,812	573,373	2,004	3.50	5.91	169,244
1905	392,722,635	626,035	386,379,243	615,628	2,232	3.63	5.78	173,109
1906	414,157,278	640,780	407,835,003	631,086	2,116	3.35	5.19	192,710
1907	480,363,424	680,492	461,406,023	655,418	3,197	4.88	6.93	144,325
1908	415,842,698	690,438	404,932,764	672,794	2,449	3.64	6.05	165,346
1909	460,814,616	666,555	460,761,427	666,523	2,668	4.00	5.79	172,699
1910	501,596,378	725,030	501,596,378	725,030	2,840	3.92	5.66	176,618
1911	496,221,168	728,348	496,221,168	728,348	2,719	3.73	5.48	182,501
1912	534,466,580	722,662	534,466,580	722,662	2,360	3.27	4.42	226,469

It will be noted that in the ten years the death rate for each 1,000 men employed was less in 1912 than in any other year with the exception of 1903; that less men were killed for every 1,000,000 tons of coal mined in 1912 than for any other of the ten years; and that more coal was produced for each life lost than in any other of the ten years. The statistics

every encouragement that there will be further decreases in the future.

A comparison of the black year 1907 with 1912 shows that in 1912, 42,000 more men were employed; 54,000,000 more tons of coal were mined, and that 837 less men lost their lives in the mines.

The Mining Congress does not forget that more than the Bureau of



Group of mine experts who witnessed explosion of coal dust at experimental mine of the United States Bureau of Mines at Bruceton, Pa. Timbers in the foreground were thrown from the mine by force of the explosion.

back of the ten year period show a constantly increasing death rate until the climax was reached in 1907, the darkest year in the history of American mining. It was early the following year that the Federal government began its investigation of the causes of mine disasters and this was followed by the creation of the Bureau of Mines in 1910. Right after 1907, the increasing death rate was turned into a decreasing death rate, which has kept up to the present time, with

Mines is involved in this reduction of death in the mines. The state mine inspectors, the mine owners, the engineers and the miners themselves have had their important share in this work, but it must be remembered that it was the Bureau of Mines that led the way, obtained the co-operation of the men of the industry and preached the righteousness of the cause until it became an issue of national importance.

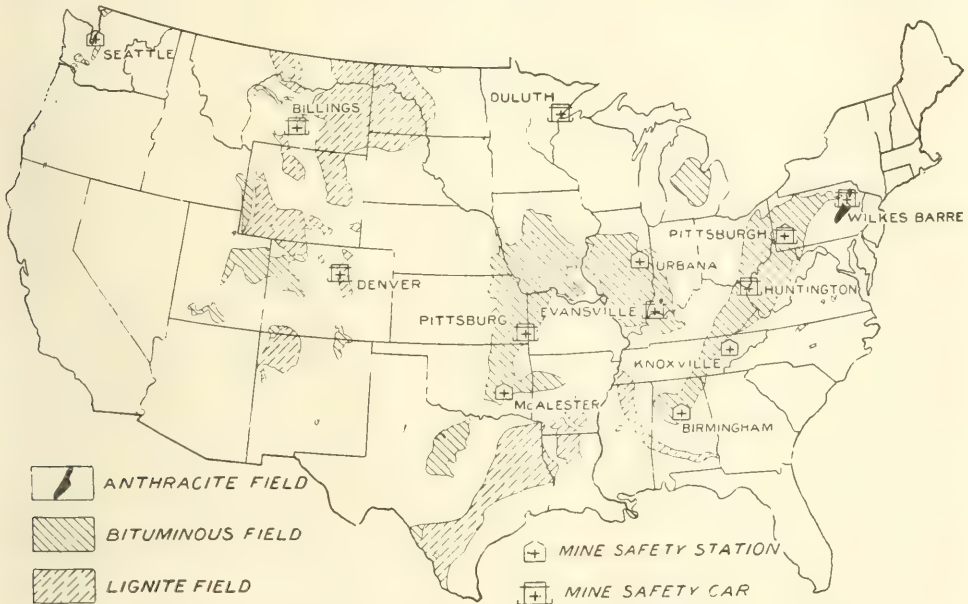
The "Safety First" Movement

When the Federal Government began its work, organized rescue work by the aid of modern apparatus was unknown in the United States. The first aid movement was a local affair, with its greatest development in the anthracite coal fields. The influence of the Bureau of Mines changed all this into a great country-wide movement which has gone beyond the mining industry and has entered into practically every known industry of importance in the United

States. Especially has the first aid movement swept across the country until it had invaded the great railroad systems, the factories and workshops of the nation.

have been required in that country many more years. The Bureau has insisted that if a mine is dusty, it shall be sprinkled with water or the exhaust steam from the ventilating fan turned into the air current to produce a humidifying effect. Many mines are carrying out this recommendation.

When it is taken into consideration that the Bureau has no power to enforce its recommendations and that must rely solely upon the moral effect of its work, the results are



The Location of the Mine Rescue Stations and Cars of the United States Bureau of Mines

States. Especially has the first aid movement swept across the country until it had invaded the great railroad systems, the factories and workshops of the nation.

The Bureau's Recommendations

The Bureau of Mines has insisted all the time that if a coal mine is gaseous or dusty, permissible explosives that have passed strict tests be used. It has seen its recommendations carried out in the constantly increasing use of these permissible explosives. Today the United States is using more permissible explosives than Great Britain, although they

almost astonishing. Officials of the Bureau declare that with the splendid co-operation of the state mine inspectors, the operators and miners, more progress has been made than if the National Congress had power to pass drastic statutes compelling the adoption of the methods of the Bureau.

The Bureau has used its experimental mine at Bruceton, Pa., to considerable advantage during the last year in endeavoring to find the value of the Taffanel stone dust barriers in stopping dust explosions that have started. The dust barriers have checked the explosions, but the Bureau is not yet prepared to announce its

recommendations. It has been suggested in a way that if stone dust will stop an explosion, why not have the dust at the place where the shot is fired to kill the explosion at its very incipiency or even prevent it.

Other Dust Explosions

Following a dust explosion in a cereal mill at Buffalo, New York, a

tions for the mills in future. Within the last five years such explosions in flour mills and corn product factories have increased at an alarming rate with heavy loss of life. This is said to be the first time the millers have taken up the subject in a serious manner, many persons having been prone to doubt that cereal dust would explode.



One of the Rescue Crews of the United States Bureau of Mines

few months ago, in which thirty-one men lost their lives, the Bureau tendered its services in aiding the investigation of the causes of dust explosions in such mills. The Bureau, through its own investigations into coal dust explosions, felt that it was peculiarly fitted to assist the millers in their problem, and the millers, realizing this, entered into a co-operative agreement in which they engaged the services of one of the bureau's experts to not only inquire into the phenomena of dust explosions but also to formulate rules and regula-

Conservation of Natural Gas

The work of the Bureau of Mines is not, however, confined to the saving of life. The organic act under which it operates is wide enough to permit the Bureau to take up any problems affecting the industry. It is therefore with considerable interest that the American Mining Congress tells of what is perhaps one of the most notable achievements of the Bureau in the last year—the practical stopping of the waste of natural gas in the state of Oklahoma. Dr. Holmes, the director of the Bureau found that in

Oklahoma, the men who were drilling for oil were paying no attention whatever to the gas and were wasting it to the extent of many millions of dollars worth every year. Two of the Bureau's oil experts were sent into the state with instructions to give a demonstration of a method of drilling that would save the gas and still get the oil. They introduced what is known as the "mud-laden fluid"

ral gas a year and that within the next few months this saving will reach \$23,000,000 a year. The values are based on the average price of natural gas in the United States.

This is undoubtedly the first definite and practical step in stopping an economic crime that has cost this country millions of dollars. Natural gas is the most perfect fuel known, and the United States has been un-



The Pulmotor, the Famous Resuscitating Device, Being Used in Reviving an Asphyxiated Miner

method, which carries this mud fluid down with the drill, the mud filling in all the crevices and effectually sealing up the gas for future use. This method not only saved the gas, but also held back the troublesome water in certain wells, and was such a success that the well drillers are adopting it as rapidly as they can. It is estimated that the work of two of the Bureau's experts in that state has already resulted in a saving of more than \$10,000,000 worth of natu-

usually blessed with a great abundance of this natural resource. In the past, in nearly every state where oil has been found, the drillers of the wells have allowed the gas to escape, until it was declared that it was impossible to hold it and still get the oil.

The Radium Situation

Several months ago, the Bureau of Mines made the statement that although the United States is perhaps the richest country in the world in

radium-bearing ores, no radium had been produced in the United States, the ores being shipped at ruinous prices to Europe, where the radium content was obtained and sold back to the United States at a tremendous profit. It was further pointed out that from every indication, the world's output of radium last year came from American ores, this being based on the fact that a sufficient amount of carnotite had been shipped from Colorado to make the amount of radium claimed as the output.

Since that announcement one American firm has started to make radium, and negotiations are now in progress that look to important developments in making this an American industry. The carnotite ores of Colorado continue to be shipped to Europe, but the publication of the conditions as found by the Bureau has led to the Americans obtaining better prices for their ores and the acceptance by Europeans of a lower grade ore than they would take before.

Alaska

The Bureau now has in the Matanuska coal fields of Alaska an expedition which has begun operations on the mining of 1,000 tons of coal; this coal to be taken to tidewater and tested in Alaskan waters on the cruiser Maryland. One year ago the Bureau mined 800 tons of coal in the Behring River field for the same purpose. It is expected that these tests, which are being made in behalf of the Navy, will give a definite idea of the value of Alaskan coals and that their commercial development will follow soon after.

The General Fuel Investigations

The Bureau of Mines, after several years of effort, has just issued Bulletin 22, entitled, "Coal Analyses of the United States." This publication contains more than 5,000 analyses of coal from more than 1,500 different mines and covering every coal field in the country. It is said to be the most comprehensive study of the coals of a country that has ever been made anywhere. The bulletin, it is thought, will be of inestimable value to the

engineers of the country and indirectly of as much advantage to manufacturing establishments. The information in this publication would enable an engineer in any part of the United States to learn the nearest point where he may obtain the type of coal suitable for his furnaces and at the least cost.

It is further believed that the bulletin carries a practical solution of the smoke problem. The Bureau's engineers declare that most of the objectionable smoke created in the cities is due to the use of fuel that is not adapted to the type of furnace. The proper fuel in the right furnace will mean perfect combustion and this means no smoke. The information contained in this publication not only will assist the engineer in selecting the right fuel for his furnace, but will also guide him in installing in new plants the furnace that will burn the coals that are nearest at hand and therefore most economical. In a number of American cities, where the civic authorities are fighting the smoke nuisance, they have been given valuable aid by the Bureau of Mines in another direction. The Bureau, some time ago issued a bulletin which contained a definite plan of procedure for municipalities to follow in conducting a campaign. Many civic organizations have taken the recommendations of the Bureau and much good has already resulted.

As a whole, the coal mining business is the most indispensable the most unprofitable, the most maligned and misunderstood of all the mediums through which the welfare of the people is secured. It is the most important and the most helpless, having in it the power to command and yet being a non-resistant mass, accepting with only feeble protest the criticisms of a misinformed public. The public thought looks to a cheapening of this essential product by destroying the productive machinery which now furnishes them the cheapest fuel in the world.

THE MINING SHOW

First National Exposition of Mining Machinery and Supplies,
October 17th to 25th

For many years past—in fact, almost since the origin of the American Mining Congress—each succeeding convention has called forth an ever increasing demand from manufacturers of mining machinery and supplies for a place where they could exhibit their inventions and products to the assembled delegates. Attempts were made from time to time to comply with this demand and space for such

comprehensive in its scope and educational in its nature.

After an investigation of the various places available, Horticultural Hall was finally selected. Literature was prepared and sent to the leading manufacturers inviting their co-operation and a comprehensive plan formulated and gotten under way. The leading manufacturers were quick to see the value of such an exposition



Horticultural Hall, Where the First Mining and Industrial Exposition Will be Held

purposes was secured whenever possible, but until this year no attempt has been made to hold a comprehensive exhibition.

During the present year this demand lead to a decision that, if the proper place could be secured in Philadelphia, there should be given in conjunction with the 16th Convention, a mining exhibition both

and the results have been so favorable that it is felt that such a project should have been launched years ago.

As an indication of the interest exhibited by the leading manufacturers and the character of the exhibits entered, a partial list follows:—

Westinghouse Electric & Manufacturing Company, Pittsburgh, and Baldwin Locomotive Company, Phila-

delphia, mine locomotives; Western Electric Company, New York, mine telephones, Milwaukee Locomotive Company, Milwaukee, Wis., gasoline mine locomotives; Universal Portland Cement Company, Chicago, Ill., use of cement in mining; Streeter-Amet Weighing & Recording Company, Chicago, automatic weight recorder for mine tipples; The Lobdell Wheel Car Company, Wilmington, Del., car wheels and axles as applied to mining cars; J. S. McChesney & Company, Chicago, mine supplies; Williams Patent Crusher & Pulverizer Company, Chicago, a coal crusher; Atlantic Refining Company, Philadelphia, lubricating oils; Hirsch Electric Mine Lamp Company, Philadelphia, miner's cap and lamp; Henry Troemner, Philadelphia, assay and analytical balances; West Virginia Rail Company, Huntington, W. Va., steel rails; Keuffel & Esser Company, Hoboken, N. J., mathematical and surveying instruments; C. O. Bartlett & Snow Company, Cleveland, Ohio, working model of a complete coal handling plant; American Tempering Company, Springfield, Ill., a system of welding; Hyatt Roller Bearing Company, Newark, N. J., mine car wheels with roller bearings; Roessler & Hasslacher Chemical Company, Chicago, elevating, conveying and transmission machinery; Fairmount Mining Machinery Company, Fairmount, W. Va., portable electric mine pump etc.; Draeger Oxygen Apparatus Company, Pittsburgh, Pa., life saving apparatus; General Electric Company, Schenectady, N. Y., electric machinery and appliances; Jeffrey Manufacturing Company, Columbus, Ohio, storage battery locomotive etc.; John A. Roebling's Sons Company, Trenton, N. J., wire ropes and cables; The Alexander Milburn Company, Baltimore, Md., carbide lamps; etc., Main Belting Company, Philadelphia, belting; Electric Storage Battery Company, Philadelphia, storage batteries designed for mine locomotives; Goodman Manufacturing Company, coal mining machinery; John G. Scott, Girardsville, Pa., patented transmis-

sion rope clip; Edison Storage Battery Company, Orange, N. J., storage batteries and electric mine lamps.

The exposition will also show, in a graphic way, what is being done by the mining industry in reducing the number of deaths in the mines. The famous oxygen helmets, which permit rescuers to enter mines filled with deadly gases following explosions, will be shown and its use will be demonstrated by a trained crew from the United States Bureau of Mines.

The basement of the Horticultural Hall has been fitted up to resemble a coal mine, and in this place the rescuers will demonstrate their life saving methods. In the coal mine there will be an air-tight room with glass sides. This will be filled with smoke and the rescuers will work in the stifling vapors. The well-known resuscitating device, which is said to be responsible for the saving of more than 300 lives since it was introduced in this country by Dr. Joseph A. Holmes, the director of the United States Bureau of Mines, will also be shown and its workings demonstrated by Uncle Sam's crew. Modern safety lamps, which have the stamp of approval of the mines' bureau, will also be shown.

There will also be continuous moving pictures, depicting mining in all its various phases. The films were taken by the Federal government as a matter of education to the miners and will be shown by the United States Bureau of Mines.

The west will be represented at the exposition by a placer gold mine in full operation with old-time miners in charge. A carload of gold-bearing gravel from the famous Cherry Creek district of Colorado is being placed in Horticultural Hall. It was at Cherry Creek that gold was first discovered in Colorado. The gold mine will represent the three original methods of recovering this precious metal: first, the miner washing the gold from the gravel in a pan; second, the washing of the gold by means of a rocker of "long Tom", and third, the sluice method.

PRELIMINARY PROGRAM

(Subject to Change)

Sixteenth Annual Session of the American Mining Congress, Philadelphia,
October 20-24, 1913

OPENING SESSION

The Congress will convene at 2 o'clock P. M., October 20, 1913, at the Bellevue-Stratford Hotel.

2.00—Meeting will be called to order by Hon. Frank H. Wigton, Chairman of the Local Executive Committee.

Invocation.

Opening Remarks by the Chairman.

Address of Welcome by Hon. Rudolf Blankenburg, Mayor of Philadelphia.

Address of Welcome by Hon. John K. Tener, Governor of Pennsylvania.

Response by Dr. D. W. Brunton, President of the American Mining Congress.

Three minute responses by a member of each State Delegation.

Alaska—Col. B. F. Millard, Valdez.

Alabama—L. B. Musgrove, Jasper.

Arizona—Epes Randolph, Tucson.

Arkansas—H. P. Bradford, Little Rock.

California—H. Foster Bain, San Francisco.

Colorado—Allen Burris, Cripple Creek.

Georgia—W. H. Fluker, Thompson.

Idaho—Hon. Addison T. Smith, Twin Falls.

Illinois—Charles M. Moderwell, Chicago.

Indiana—Hugh Shirke, Terra Haute.

Iowa—E. C. Smith, Des Moines.

Kansas—S. R. Ping, Galena.

Kentucky—Hywel Davies, Louisville.

Michigan—

Minnesota—

Missouri—Hon. Perl D. Decker, Joplin.

Mississippi—Dr. E. M. Lowe, Jackson.

Montana—Hon. W. R. Allen, Butte.

Nevada—Jules Labarthe, Thompson.

New Mexico—T. H. O'Brien, Dawson.

New York—Edward G. Acheson, Niagara Falls.

Ohio—C. L. Cassingham, Cleveland.

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Oregon—H. N. Lawrie, Portland.

South Dakota—R. L. Daugherty, Lead.

Tennessee—Charles A. Smith, Chattanooga.

Texas—Isadore Broman, Austin.

Utah—George H. Dern, Salt Lake City.

Virginia—J. H. Allport, Dante.

Washington—Sidney Norman, Spokane.

West Virginia—Neill Robinson, Charleston.

Wisconsin—George L. Jarrett, Platteville.

Wyoming—P. J. Quealy, Kemmerer.

Evening Session

President's Annual Address—Dr. D. W. Brunton, Denver, Colo.

Reception to the officers and delegates by the citizens of Philadelphia.

TUESDAY, OCTOBER 21

(As many of the following addresses as can be secured in advance will be printed and distributed to the delegates, the author occupying a few moments for any necessary explanatory or supplementary statement. The additional time thus gained is to be utilized by a discussion of the subject by any delegate who desires to be heard. Each delegate is urged to come prepared to add new light to some of the subjects presented.)

Morning Session

Selection of Committees.

Address, "Taxation of Mining Property"—

R. V. Norris, Wilkes-Barre, Pa.

Discussion led by Prof. H. L. Smyth, Cambridge, Mass.;

F. W. Parsons, New York; Harry N. Taylor, Chicago;

T. H. O'Brien, New Mexico.

Discussion of the general subject of mine taxation, under five-minute rule, to be followed by resolution embodying the best thought of the Convention concerning the principles upon which an equitable system of mine taxation should be based.

Address, "Mine Accounting"—

J. B. L. Hornblower, Pittsburgh, Pa.

Discussion under five-minute rule.

Address, "Uniform Requirements for Official Mine Reports"—

S. A. Taylor, Pittsburgh, Pa.

Afternoon Session

The Reception Committee will charter a steamer for a river trip, giving the delegates and their friends an opportunity to view the ship yards, the mammoth coal wharves, the U. S. Navy Yard and other points of interest. Steamers will leave wharf at 1:30 and return at 6 o'clock p. m.

Evening Session

Annual Meeting of Members at 7.30.

Address, "The Use and Abuse of Explosives"—

Robert W. Gunnell, Pottsville, Pa.

Introduction of Resolutions.

Report of Committee on Prevention of Mine Accidents—

Dr. W. R. Ingalls, New York.

Address, "Mine Rescue and Recovery Work"—

J. W. Paul, Pittsburgh, Pa.

Discussion led by Dr. Charles E. Munroe, Washington, D. C., and Col. B. M. Dunn, New York.

Address, "The Storage and Handling of Explosives in Mines"—

Clarence Hall, Pittsburgh, Pa.

Discussion led by Dr. Munroe and Col. Dunn.

General discussion under five-minute rule.

WEDNESDAY, OCTOBER 22

Morning Session

Introduction of Resolutions.

Report of Committee on Alaskan Affairs—

Falcon Joslin, Fairbanks, Alaska.

Address, "The Coal Resources of Alaska"—

Dr. W. R. Crane, State College, Pa.

Address, "The Public Lands"—

Dr. James Douglas, New York.

Discussion, A Western Idea of Conservation—

Hon. John F. Shafroth, Senator from Colorado.

Address, "The Industrial Corporations and Scientific Research"—

D. B. Rushmore, Schenectady, N. Y.

Afternoon Session

Report of Committee on General Revision of Mineral Land Laws—

E. B. Kirby, St. Louis, Mo.

Address, "Plain Talk"—

Dr. George Otis Smith, Director U. S. Geological Survey, Washington D. C.

Address, "Revision of Mineral Land Laws"—

Horace V. Winchell, Minneapolis, Minn.

General discussion under five-minute rule.

Report of Committee on Mining Investments—

Hon. W. R. Allen, Butte, Mont.

Discussion led by John R. Burton, New York; L. A. Sisley, Chicago.

General discussion under five-minute rule.

Evening Session

Address, "The Relation of Big Business to Industrial Prosperity with Special Reference to Mining"—

Dr. Charles R. Van Hise, President of Wisconsin University, Madison, Wis.

THURSDAY, OCTOBER 23

Morning Session

Report of Committee on Coal Mining Legislation—
Walter M. Bogle, Chicago, Ill.
Address, "The Cost of Coal Production"—
Dr. E. W. Parker, Washington, D. C.
Address, "What is the Matter with the Coal Mining
Industry?"—
John W. Boileau, Pittsburgh, Pa.
Discussion led by—
A. J. Moorshead, St. Louis, Mo.
Harry N. Taylor, Chicago, Ill.
W. R. Woodford, Cleveland, Ohio.
W. J. Jenkins, St. Louis, Mo.
C. M. Moderwell, Chicago, Ill.
Carl Scholz, Chicago, Ill.
J. G. Puterbaugh, McAlester, Okla.
W. L. Schmick, St. Louis, Mo.
General discussion under five-minute rule.

Afternoon Session

Automobile trip to Valley Forge—for the Ladies.
(Executive meeting of Coal Operators for general dis-
cussion, Temporary Chairman, Harry N. Taylor,
Chicago, Ill.)
Address, "Gold Mining in Georgia"—
W. H. Fluker, Thompson, Ga.
Address, "Federal Aid to Mining Schools"—
Dr. Erasmus Haworth Lawrence, Kansas.
Address, "A New Idea on Conservation"—
Dr. Walter O. Snelling, Pittsburgh, Pa.
Address, "The Federal Government and the Mining
Industry"—
Dr. Martin D. Foster, Chairman House Committee
on Miners and Mining, Washington, D. C.
Discussion.

Evening Session

A Get-together Smoker and entertainment will be
tendered by the Entertainment Committee.

FRIDAY, OCTOBER 24

Morning Session

Report of Committee on Standardization of Electrical
Equipment in Coal Mines—
George R. Wood, Philadelphia, Pa.
Consideration, Report Committee on Resolutions.
Address, "Arbitration as a Factor in the Mining Indus-
try"—
Hon. Wm. B. Wilson, Secretary of Labor, Wash-
ington, D. C.
S. D. Warriner, Philadelphia, Pa.
Hon. William Green, Ohio.
Benjamin Clark, Punxsatawney, Pa.
General discussion under five-minute rule.

Afternoon Session

Report of Committee on Workmens' Compensation—
John H. Jones, Pittsburgh, Pa.
Address, "Workmens' Compensation Laws and Acci-
dents—Prevention Work"—
Thomas L. Lewis, Bridgeport, Ohio.
E. T. Bent, Chicago, Ill.
S. A. Taylor, Pittsburgh, Pa.
David Ross, Springfield, Ill.
General discussion under five-minute rule.
Address, "Some Problems of the Mining Industry"—
Dr. Joseph A. Holmes, Director U. S. Bureau of
Mines.

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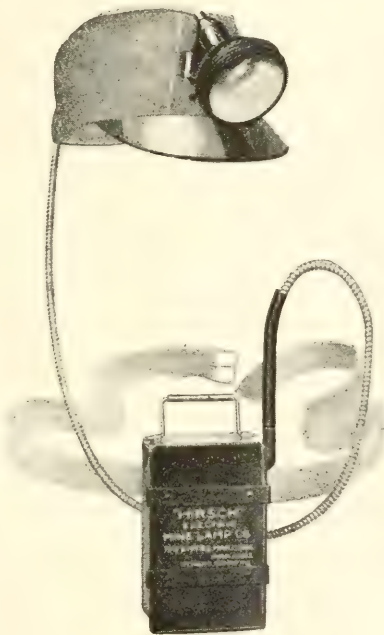
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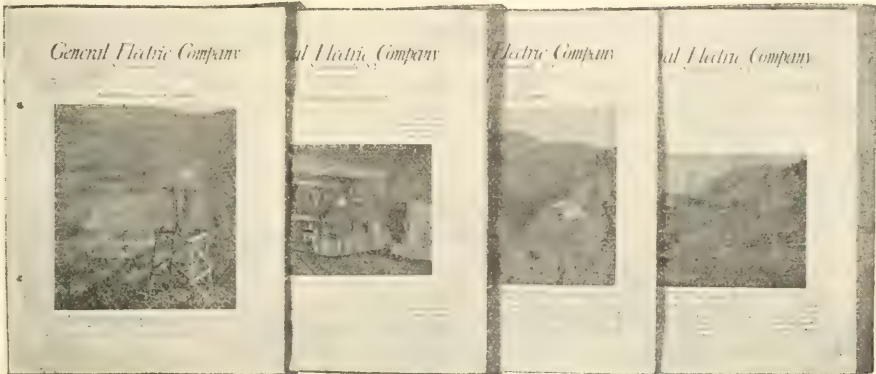
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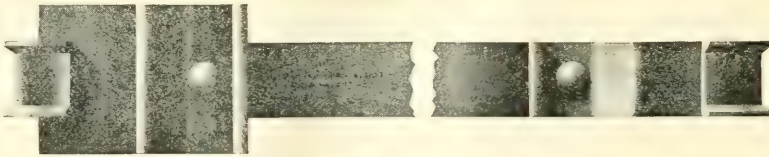
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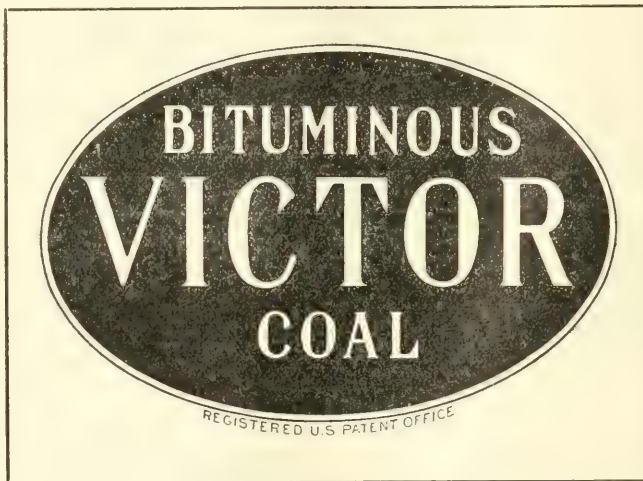
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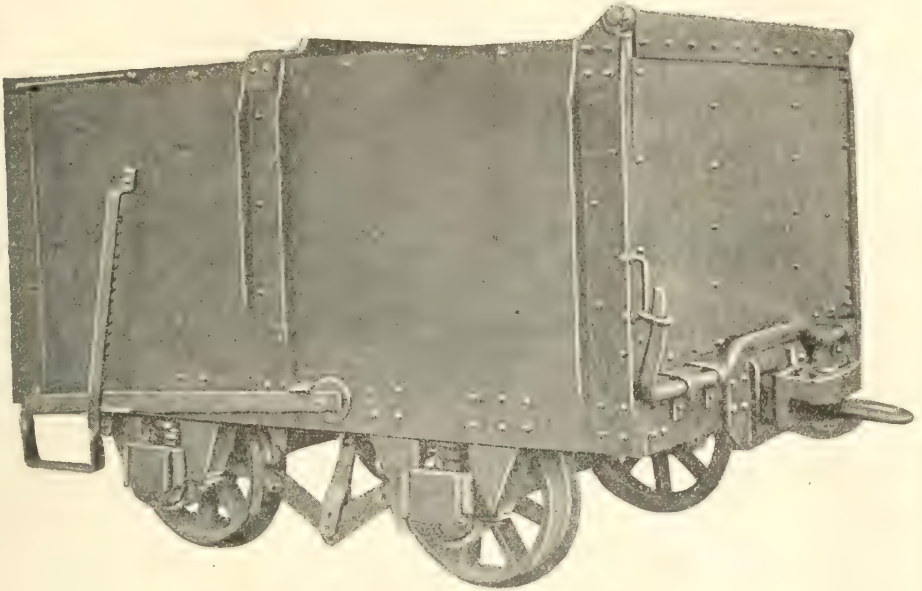
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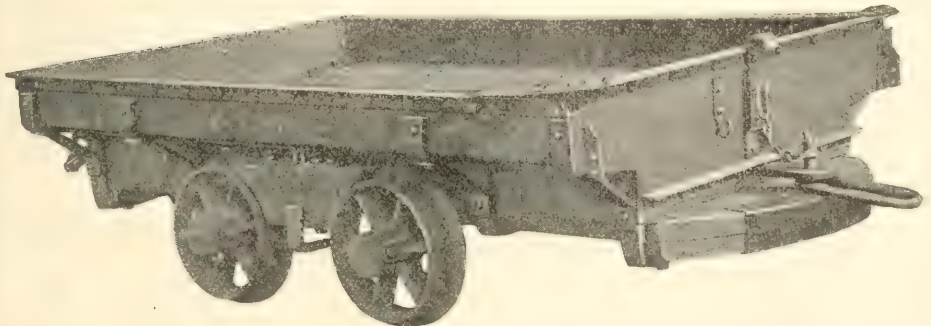


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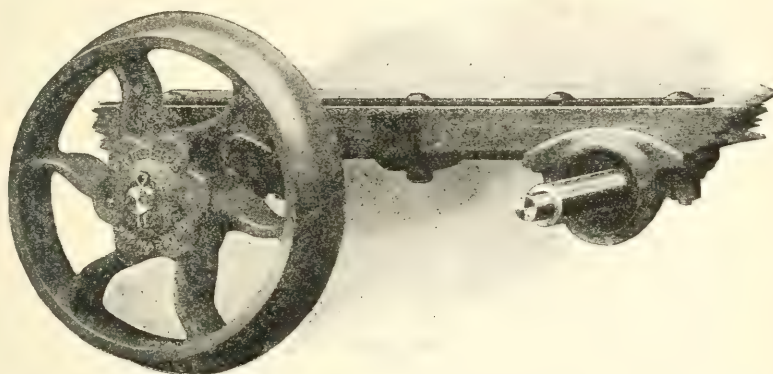
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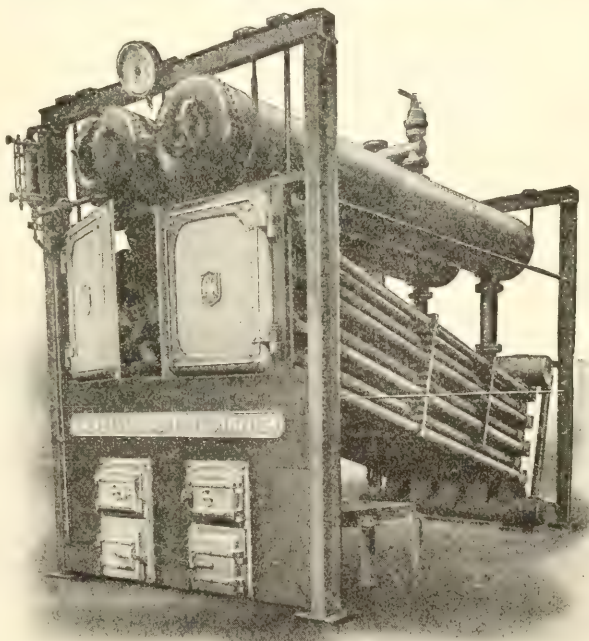
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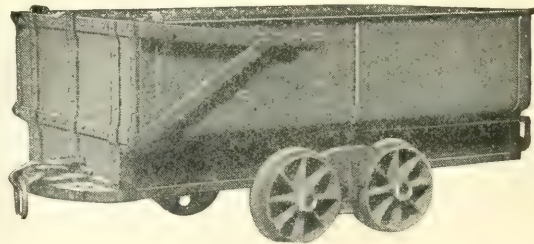
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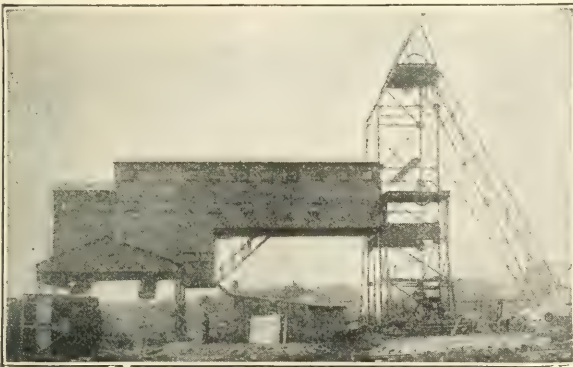
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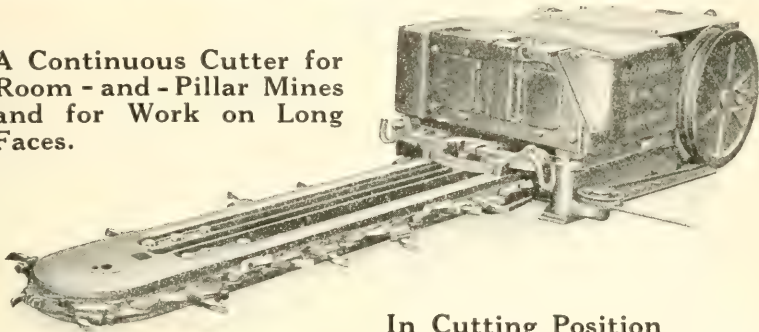
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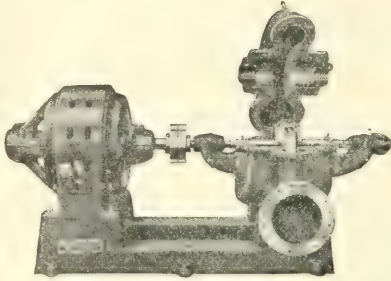
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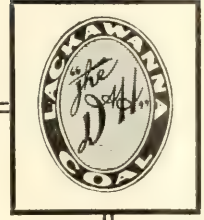
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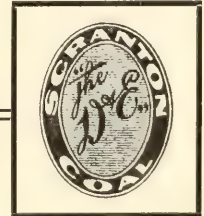
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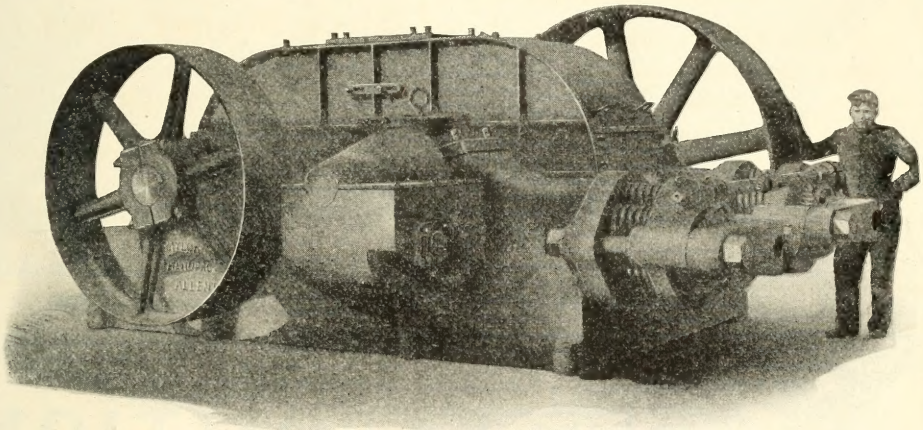
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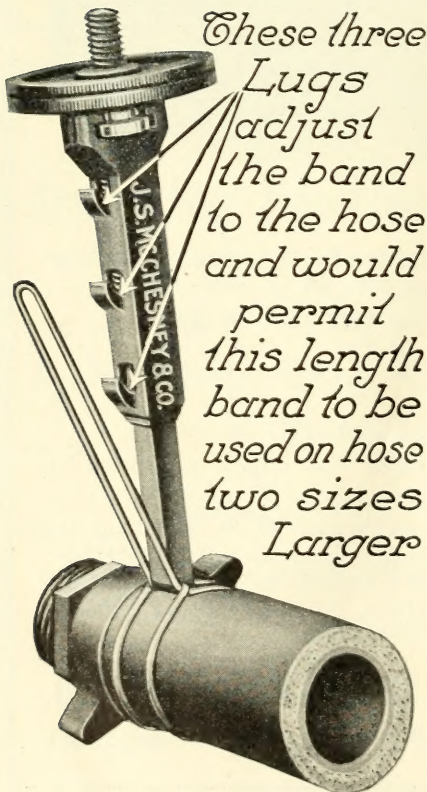
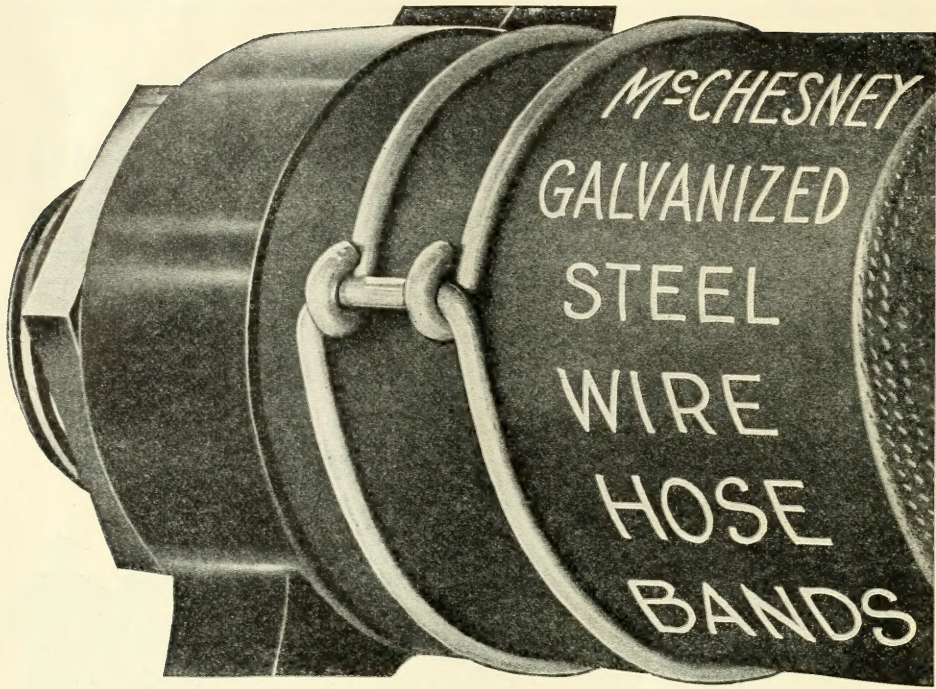
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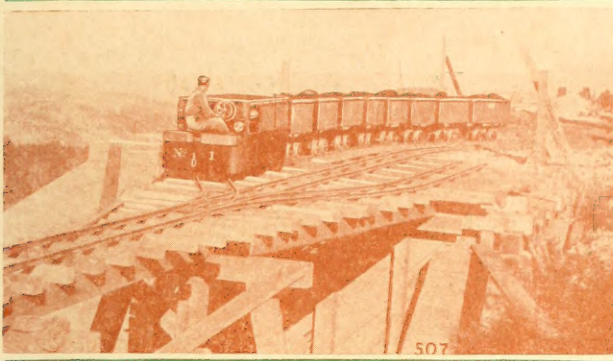
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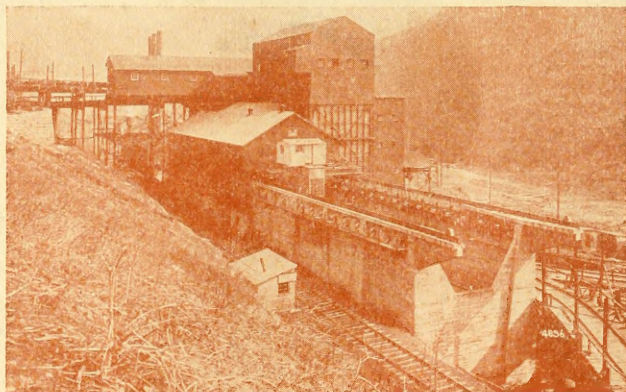
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